Info-Hams Digest   Sat, 2 Apr 94   Volume 94 : Issue 367

Today's Topics:
                         CALLBOOK ON INTERNET
                        Minisport Hacker #21
                           Packet question
                    QSL info for HS0ZAD (2 msgs)
                 STOP SENDING HAMS ON USENET CRAP !!!
                   Super-conducting antenna (LONG)
                      Supermorse under windows.?
                UK callbook via WWW - where is it again?
                   Wanted: Plans for 6m transverter

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Bill Turner <wrt@eskimo.com> writes:

>
>I know of one: telnet to callsign.cs.buffalo.edu 2000 and do the usual
>readmes, etc. This is FCC data only, so no furriner info available. If
>anyone knows of others, I'd like to know about 'em too.
>

>73 es gl
>
>Bill, W7LZP
>

Another on-line server is at pc.usl.edu 2000. Type help once you are in.
You can search by name, call, zip, city, and I think a couple of other
fields. You can also filter your searches. I used it to quickly find all
hams in my city. Give it a try, and good luck.

Ned, N8OIF.   73's

Date: 1 Apr 94 18:33:54 GMT
From: ihnp4.ucsd.edu!swrinde!emory!nntp.msstate.edu!olivea!isc-br!tau-ceti!
jupiter!opus-ovh!bmork@network.ucsd.edu
Subject: Minisport Hacker #21
To: info-hams@ucsd.edu

MiniSport Laptop Hacker - Vol #21.   April 1994
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>>> ADMIN
The MLHacker series is formatted to print out on 8.5"x11" sheets manual-
ly fed into an Epson LQ-850. I print at 8 lpi, which gives 82 lines per
page. My goal is to make each MLHacker one to two pages, to fit front
and back on one page. Back issues are available via Internet e-mail and
ftp archives and direct from my data line listed below. File download
privilege is given on the first call. Use the F)ile option and L)og
into the \public\computer directory. No cost 'cause I just like doing
it. Do something you're interested in for free and pass it on!

The Air Force has me committed to some massive amounts of overseas
flights during April and May. For this reason, I expect MLHacker will
take a hiatus during that time.

>>> AUTOMOBILE POWER SUPPLY
Something has been bothering me ever since issue #12 of MLHacker. I
mentioned how you could tap into your car cigarette lighter, step the
voltage down to 9 volts and use that to power your Minisport. So far,
true. My bad recommendation was the placement of a noise-killing capac-
itor and inductor.

Yes, put a big inductor in series (old lamp ballast works fine) to kill
ignition glitches. But don't put the capacitor on the car side of the
inductor. Put it on the *computer* side of the inductor. The problem
is this: When you switch off the computer, the magnetic field sustained

by the inductor collapses, forcing continued current flow. But the com-
puter is off! Being off is a high resistance. As the charge collects
on this high resistance, the voltage peaks very high. To some extent,
the internal Minisport battery, which is effectively in parallel across
the power line, begins to conduct (i.e. charge up) as the voltage rises,
so there is some limit on the voltage. But I was wrong to suggest put-
ting the capacitor where the inductor could feed off from it. It's much
better to put it on the computer side, where it will dampen the inbound
current. An additional improvement would be to put a diode across the
inductor (cathode, banded end toward the car). It will then short out
the inductor spike upon power-down.

Some folks have indicated they run the Minisport straight from 12 volts.
I'm not sure I'd recommend that, but I'd be interested in anybody's suc-
cess doing this. Battery? Direct from car? One MLH reader is working
to modify a drill battery pack to power his Minisport. I hope to talk
him into writing up notes on the project.

>>> INSIDE THE BATTERY PACK
Jim sent me a dead battery pack to rip apart. Aha! The final link to
the puzzle. MLH #12 discusses the wall adapter/battery pack connection.
MLH #14 discusses the battery pack/computer connection. Issues #17 and
#18 discuss the switching power supply board inside the Minisport. Fi-
nally, here's the stuff from inside the battery pack. In the process of
documenting this, I discovered another error from issue #12--my descrip-
tion of the small pin on the 3-pin charging connector. I believe the
information provided here to be the correct interpretation.

                        BATTERY PACK INTERNALS

 Round Power Supply Connector   Tab Connectors
 -----------------------------   ----------------

 9V, 2A BOTM --- CTR (red)

 6V, 1A TOP ---+-- AFT (yellow)
                                                         |
 8.3V O.C. LITL ----TC1---+   +---:|:|:|--TC2--:|:|---+
                          | |
 GND SHIELD -------------+----+------------------------FORW (black)

There is also a tiny chip capacitor between the 9V supply rail and
ground. A parallel surface mount spot (for a resistor?) is empty on the
circuit board inside the one battery pack I've inspected.

The charger adapter has four connections: the shield, two similar pins,
and a third pin smaller than the other two, thus the titles BOTM, TOP,

and LITL. The tab connections on the bottom of the battery pack corre-
spond to the three slide connectors visible inside the minisport when
you remove the battery pack. The colors correspond to the wiring color
visible inside the computer when the bottom is removed.

TC1 is a thermal cutoff unit, tightly mounted to the battery cell clos-
est to ground. TC2 appears physically similar. While charging this
battery pack, I monitored the voltages on the power supply connector.
BOTM was 9.2V, TOP was 7.6V, and LITL was zero volts. I applied a heat
gun onto TC1, and at 0:12 the voltage at LITL jumped up to 8.3 volts.
At 0:40, TC1 closed and the voltage at LITL went back to 0 volts.

It seems clear that the design of this system is to overvoltage the bat-
teries (7.2v onto a 5x1.2 => 6.0v battery pack) and when the batteries
get warm, the thermal cutoff ungrounds a signal back to the charging
unit. To confirm that the charger responds to the signal, I loaded the
battery pack with a 20 ohm resistor and hooked up the charger, giving
7.2 volts across the resistor (about 350 mA drain, 2.5 watts). I would
expect that if the charger shut off, the voltage would drop a little bit
as the battery pack picked up the entire load and started discharging.
Sure enough, after about 20 seconds of heating TC1, the voltage across
the resistor dropped to 6.8 volts.

Heating TC2 has expected results. While charging, I measured 7.0 volts
across an unloaded, charging battery. At 0:20 of heating, an audible
click occurred and the voltage dropped to 2.9 volts. I turned off the
heat gun and at 1:14, I heard another click and the voltage comes back
up. While *not* charging, the voltage goes from 6.5 to 0.0 with nearly
identical timing. I think the 2.9 volts observed while charging was
residual output from the charging unit.

>>> BAYCOM VS POOR MAN'S PACKET
Poor Man's Packet software works fine to receive packets on the Minis-
port using the hardware described back in MLHacker #9. It does not work
on transmit. If you try to send a packet, the transmit tones just lock
up at 1200 Hz or 2200 Hz. This was confirmed using another ham's
(thanks Ron) PMP hardware rigged to run off COM1 (normal DB-9 out the
back). PMP is written in C, including the AX.25 bit packing routines.
I think these are just not fast enough when run on the 8 MHz Minisport.

Baycom uses a separately loaded driver to talk to the hardware. It's
small and efficient, probably written in assembly. I got a copy of Bay-
com software and using Ron's Baycom hardware, which was rigged to oper-
ate on a parallel port, everything worked fine.

Conclusion? The Minisport needs bit packing routines written in assem-
bly. Baycom offers this; PMP does not. I thought the PMP hardware was
designed to be bit compatible with Baycom (e.g. RTS does the PTT func-

tion, and so on). Apparently, this is not so. When I redirect the Bay-
com to COM2, it does not work with the PMP hardware I built and de-
scribed in MLHacker #9.

I don't have the time right now to do an assembly rewrite of the PMP
software, so I want to figure out how to use the Baycom software. Any-
body out there more familiar with Baycom and what bit lines it uses for
what? Eventually I'll poke around and find out what's going on, but
maybe somebody could save me the trouble.

>>> FUTURE PROJECTS
I saved up money for several months and purchased a Fluke 97 digital
storage scope / DMM "do everything" box. It's roll mode data monitor
worked great for probing the battery pack. Expensive, but a *superior*
bench top accessory. I'm interested in anybody using one of these.
Mine has an optical data interface and that will, I'm sure, eventually
be hooked to my Minisport.

I also picked up a 670 nm laser diode assembly, including a photodetec-
tor and stepper motor. The light beam comes up through the shaft of the
stepper motor, allowing the outbound beam to be aimed onto one of eight
mirrored segments, and reflected forward. Inbound light is collected by
all eight segments simultaneously and focused onto the on-axis photode-
tector. I wonder if I can hook this up to the computer to do a laser
light show. Or maybe a proof of concept optical radar. Hmm... :-)

Please provide feedback!   * Direct data 1-509-244-9260
                                  * ARO Net KA9SNF@wb7nnf.#ewa.wa.usa
                                  * Internet bmork@opus-ovh.spk.wa.us
73, Brian   * 6006-B Eaker, Fairchild, WA 99011

Date: 1 Apr 1994 18:01:21 GMT
From: ihnp4.ucsd.edu!swrinde!cs.utexas.edu!math.ohio-state.edu!magnus.acs.ohio-
state.edu!csn!col.hp.com!news.dtc.hp.com!hplextra!hpscit.sc.hp.com!icon!
hpchase.rose.hp.com!robbo@network.ucsd.
Subject: Packet question
To: info-hams@ucsd.edu

Hi!
 I was looking around my local packet BBS the other day
and 'escaped' to DOS. After reading all the help information I found
I a feature that allows binary file transfer.
However, the binary upload/download operation needs a program
or protocol called AUTOBIN. I left a message for the sysop and packet
BBS owner, but he had never heard of it. He said he just unpacked
the software and let it run.

SO does anyone know about the program/protocol you need to make binary
transfer possible over packet?
What is AUTOBIN?
Where can it be obtained from?
73
Dave
--
~~~~~~
~   Dave Robinson (KD6MXD) (916) 785-4102 ~
~ DST M/S R5EF   ~
~ 8000 Foothills Blvd.   ~
~ Roseville, CA 95678   ~
~   HPDesk: Dave Robinson /HPUNIX/UX   ~
~   Unix to Unix: robbo@hprpcd.rose.hp.com
~~~~~~

Date: Wed, 30 Mar 1994 17:45:10 GMT
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!pipex!uknet!EU.net!relay.puug.pt!
news.inesc.pt!animal.inescn.pt!ciup2.ncc.up.pt!news.ci.ua.pt!
etjfonte@network.ucsd.edu
Subject: QSL info for HS0ZAD
To: info-hams@ucsd.edu

Paul K.C. Wang (pwang@tornado.seas.ucla.edu) wrote:

 QSL to HS0ZAR I think it is via K3SO ??

--
|--|
Jose' Miguel M.B.Fonte	Universidade de Aveiro - PORTUGAL
	Departamento de Electronica e Telecom.
E-mail : etjfonte@ci.ua.pt	---
	Ham callsign : CT1ENQ "always QRV"

Date: Wed, 30 Mar 1994 17:46:09 GMT
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!pipex!uknet!EU.net!relay.puug.pt!
news.inesc.pt!animal.inescn.pt!ciup2.ncc.up.pt!news.ci.ua.pt!
etjfonte@network.ucsd.edu
Subject: QSL info for HS0ZAD
To: info-hams@ucsd.edu

Paul K.C. Wang (pwang@tornado.seas.ucla.edu) wrote:

```
  Sorry . It's not K3SO but K3ZO

 QSL to HS0ZAR via K3ZO

  73's
--
|---------------------------------------------------------------------------|
| Jose' Miguel M.B.Fonte        | Universidade de Aveiro  - PORTUGAL     |
|                               | Departamento de Electronica e Telecom.  |
| E-mail : etjfonte@ci.ua.pt    |-----------------------------------------|
|                               | Ham callsign : CT1ENQ     "always QRV"  |
|---------------------------------------------------------------------------|
```

Date: 1 Apr 1994 20:02:04 GMT
From: ihnp4.ucsd.edu!swrinde!cs.utexas.edu!news.tamu.edu!furuta@network.ucsd.edu
Subject: STOP SENDING HAMS ON USENET CRAP !!!
To: info-hams@ucsd.edu

I find the hams-on-Usenet lists extremely *useful* and am glad they
are posted here with regularity. The charter of rec.radio.info
suggests that material posted to rec.radio.info should also be posted
to another one of the rec.radio groups so limiting it to
rec.radio.info would raise opposition. Whether or not this is a
reasonable charter is the topic of a different discussion.

I write mostly because the danger is that the Mark Salyzyn, VE6MGS,
will read the original message and just decide that the work of
maintaining the list isn't being appreciated and will decide to spend
his time on something more rewarding.

I can think of perhaps a half dozen large messages that are posted
regularly. Many of them I find of significantly less utility than
this one.

     --Rick
       KE3IV

Date: Fri, 1 Apr 1994 19:24:40 GMT
From: ihnp4.ucsd.edu!galaxy.ucr.edu!library.ucla.edu!csulb.edu!csus.edu!
netcom.com!slay@network.ucsd.edu
Subject: Super-conducting antenna (LONG)
To: info-hams@ucsd.edu

I recently received a letter from an old friend, Joe Speroni AH0A/7J1AAA,

who has been living and working in Japan for many years. He is also the
author of the well-known MORSE ACADEMY software for teaching Morse Code.
Anyway, it was such an exciting letter that I thought it would be of
interest to others here on "the Net".

Dear Sandy:

I had promised a series of articles on Japanese amateur radio, but
there is something so exciting I just have to take a break and tell
you about it.

It all started with the work that Ed Coan (AH6MI/7J1AAE) did on
antenna pattern plotting using his personal computer. The circular,
and even backward antenna patterns of some of our local TIARA
club embers brought home the point that what a good station needs is
a good antenna. Ed's antenna looks great and the results verify it.
He works regular schedules into Colorado and Maine, just like sunspots
don't mean anything. My mini-beam just could not compare.

Well, I got to thinking about what we apartment dwellers could do
and realized that space is THE problem. How do you fit a full-sized
beam on a balcony? Loading coils are the answer and the problem
at the same time -- the antenna radiation resistance drops as
reactance is substituted for length. High current loops develop
and the power is dissipated in the antenna instead of being radiated.
If only the antenna didn't dissipate the power. Hmmmmmm....let's
see, P=E*E*R; if R were 0 then......

Date: Fri, 1 Apr 94 16:29:25 -0500
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!usenet.ins.cwru.edu!eff!
news.kei.com!news.byu.edu!news.mtholyoke.edu!nic.umass.edu!noc.near.net!
news.delphi.com!usenet@network.ucsd.edu
Subject: Supermorse under windows.?
To: info-hams@ucsd.edu

Frank Robey <fcr@ll.mit.edu> writes:

>
>Has anybody been successful in getting supermorse to run under windows?
>If so, I would appreciate any help that you could give me.
>

I'm still working on that too, but the sm.doc file does refer to running
Supermorse under Windows. I believe it does list a few pointers, specifically
the timing (loop versus time). I think you need to use loop. This is under
the setup pull-down menu. Give it a try, and let me know if it works. Please

refer to the .doc file, because I am not in front of my home computer, and my
work computer does not have Supermorse installed. I don't want to steer you
wrong.

73's
Ned, N8OIF

Date: Fri, 1 Apr 94 12:59:14 PST
From: pa.dec.com!wrksys.enet.dec.com!reisert@decwrl.dec.com
Subject: UK callbook via WWW - where is it again?
To: info-hams@ucsd.edu

I know there is a UK callbook on the WWW, but forgot the address. Can
someone help me remember?

Thanks - Jim AD1C

Date: 1 Apr 1994 20:04:49 GMT
From: ihnp4.ucsd.edu!usc!elroy.jpl.nasa.gov!netline-fddi.jpl.nasa.gov!sookit!
rspear@network.ucsd.edu
Subject: Wanted: Plans for 6m transverter
To: info-hams@ucsd.edu

Steve Egert (irvse.EGert@dg-rtp.dg.com) wrote:
:
: Anyone have any plans/schematics for a 6 meter tranverter? I have a
: TS-830S to drive it.

steve -

i think i saw a posting here that mfj has a 6m transverter for $99!

regards, richard kd6lwd

rspear@sookit.jpl.nasa.gov
all disclaimers apply

Date: (null)
From: (null)
The first test didn't go too well. I connected the TS-930 to the
super-conducting wafer antenna and tuned it for 10 meters. At room
temperature, we couldn't hear anything. Using a heat pump, the lab

technicians started lowering the antenna's temperature toward the
super-conducting region. I was really impressed by how small the
equipment is, and started thinking it might all fit in the shack.
Just then, the TS-930 froze solid, which had a negative effect on
its operating characteristics. This wouldn't be so easy after all,
the coax connection would need some study!

We reworked the wafers to put inductive coupling on them, but I could
find no way to efficiently couple to it from the conducting ceramic
material that passed RF but not heat. Probably, something that
Kyocera invented just for this use. I sent the TS-940 to the ham
shop in Akihabara and asked them to touch it up for me. Suzuki-san
(service manager at the ham shop) asked exactly how the paint had
been peeled off around the coax connector -- lightning maybe? No,
I assured him -- just low temperature exposure, without saying how low
the temperatures were. The project had to stay secret and besides,
Suzuki-san can repair anything!

Since it looked like it might be a while before the TS-930 would be
repaired, I brought out my TS-940. I had already placed an order
for the Yaesu FT-1000 anyway. After verifying that in the super-
conducting range the antenna was resonant on 10 meters, we connected
the TS-940. The ceramic material worked and the rig operated well
even as we began the cooling cycle. The band seemed dead even
with the antenna at -150 degrees C. It took another 10 minutes
to get to the super-conducting range -- then the TS-940 blew up.
It seems our antenna had a bit more gain than the TS-940 front-end
could take. Later, with 100 dB of attenuation, measurements showed
5 volts coming out of the coax. A little hard to believe, but then
what do I know about cryogenic LSI antenna technology?!

The TS-940 was also returned to Suzuki-san, but this time he frowned
a bit -- the front-end board did look like it had been hit by
lightning. Not to worry, Suzuki-san can repair anything!

The FT-1000 arrived just in time to be able to continue the experiments.
We built a QSK attenuator to protect the receiver and with the LSI
wafer antenna still inside the lab, decided to try to make a contact
on 10 meters. Boy, what a shock when we got it working. The first thing
we heard was a couple of W2's talking locally on 10 meters and that was
with 80 dB of attenuation. We had the antenna array on a rotatable
mount; I moved it about 1 degree and the W2's disappeared.
What beam width! We tuned them in again, and they were just about to
sign off, so we thought we would try to work them. The rig was tuned
up at 50 watts on a dummy load; we switched in the wafer antenna and
gave N2BA a call. The noise was unbelievable -- an ionized ray shot
out from the antenna and hit the wall of the building. Before we knocked
a hole in the band, we took out a piece of the lab wall! Ever wonder

what an antenna pattern looks like in three dimensions? There was a
small round hole in the wall of the lab -- about 1 cm in circumference.
We cut power quickly. N2BA came back on frequency a few minutes
later and said he was using his back-up rig; something had taken his
main rig off the air. For some reason, the station he was talking to
never came back, and so we decided not to transmit again until we knew
for sure what was going on.

As near as we can tell, the antenna array has 120 dB gain over a dipole,
but with a beamwidth of 0.75 degrees using the 60 dB points. With
50 watts output, the effective radiated power is 55 quadrillion watts
at the center of the beam (5.5 with 13 zeroes). As soon as the
University realized what we had built, the entire project was taken
away from us and turned over to the Japanese Self-Defense Forces.
Amateur radio "tinkering" has contribute to something, but I am not
exactly sure what. I haven't the slightest idea what was in those
wafers or how to explain how to build another set. But what I'd give
to use a smaller set in the next CQ World Wide Contest! Do you think
someone may be interested in this idea for Star Wars/SDI??

A few months later, the University contacted all of us and asked
just how close we had been to the antenna when operating. As best as
I can figure, we were in the null behind the array. From what has been
said so far, it looks like a secondary use for our antenna may be as a
mass sterilizer, but confirmation will have to await the results of
the medical tests. If our antenna ever hits the market, it looks
like remote operation would be desirable.

As I am writing this, I have been informed that Suzuki-san can't fix
everything after all. He's written off the 930 and 940, and I just
found out that before the university terminated the project, they
tried one more time with my FT-1000, but without the 100 dB attenuator
to protect the receiver. It's front-end now matches the 940's and it
looks like it will be awhile before I am on the air again. Maybe
Yaesu will announce some new models soon.

Best 73, Joe Speroni AH0A/7J1AAA, ex-Chief Engineer - TIARA
1 April 1994

This story has been reprinted and edited from the April 1992 issue of
the Tokyo International Amateur Radio Association's newsletter.
Permission is granted to reprint the material provided credit is
given to both TIARA NEWS and the author - Joe Speroni, AH0A/7J1AAA.

Actually, Joe originally wrote the above back in 1985 and it has been
updated by others since. Hope you enjoyed it.
73 de Sandy WA6BXH/7J1ABV slay@netcom.com   1 April 1994

Date: 1 Apr 1994 14:38:20 -0600
From: ihnp4.ucsd.edu!agate!usenet.ins.cwru.edu!eff!news.kei.com!hookup!
news.sprintlink.net!bga.com!bga.com!nobody@network.ucsd.edu
To: info-hams@ucsd.edu

References <1994Mar30.214549.1792@unet.net.com>,
<brett_miller.90.0013B1C5@ccm.hf.intel.com>, <765162276snx@llondel.demon.co.uk>
Subject : Re: STOP SENDING HAMS ON USENET CRAP !!!

The deltas sounds good, but don't play games with the message numbers.
However, it should be available by a mail server in addition to
annon ftp.

Alternatively, why not put a filter on your feed side for the subject?

milton
--
Milton Miller KB5TKF miltonm@bga.com

End of Info-Hams Digest V94 #367
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****